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Documents

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Conventions

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No conventions on record or public access is restricted

Current Applicants/Licensees

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JAMES & WELLS

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Address for Service

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Applicant/Licensee History

No applicant/licensee on record or public access is restricted

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Related Patents

No associations on record or public access is restricted

Objections

Objection Type	Lodged Date
No objections on record or public access is restricted	

Financial Interest

No financial interest on record or public access is restricted

Renewal Interest

No Renewal interest on record or public access is restricted

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James & Wells ref: 41466 \ 21

Patents Act 1953

PROVISIONAL SPECIFICATION

Clamping Device

We, Backas New Zealand Ltd, of. 18 Moa Street, Burnham Camp, Burnham, Canterbury,
New Zealand, a New Zealand company, do hereby declare this invention to be described in
the following statement:

TECHNICAL FIELD

The present invention relates to a clamping device for releasably attaching an upright pole to a range of different objects and more particularly to a device for removably clamping a telescoping intravenous fluid carrier apparatus to an ambulance cot or other equipment.

5

BACKGROUND ART

A variety of devices to releasably attach an upright pole to a horizontal face of an object are known. Such devices are frequently permanently bolted into place or attached in such a way as to require a person to tighten a nut and/or bolt to release or engage the apparatus.

10 Additionally, the prior art equipment generally requires a high level of physical strength and manual dexterity to correctly and firmly attach the clamp.

US Patent 2696963 (Shepherd) relates to a removably attachable apparatus which clamping means consists of an arcuate element adapted to engage one side of a bed post and a clamping
15 block including a collar, with pins to secure the block to the arcuate element. The clamping means is actuated by a wheel which shortens the distance between the block and the arcuate element.

This configuration relies on the strength of the person who attached the clamp to have
20 positioned the clamp in such a way as to strongly engage the clamp. Also, the physical configuration includes a number of pins, clamps, and exterior surfaces, all of which would require especial attention for hygienic cleaning.

US Patent 2673771 (Krewson) relates to a removably attachable apparatus which clamping means consists of a clamping rod with an adjustable hand wheel which engages with a stretcher.

- 5 Again, this configuration relies on the strength of the person who attached the clamp to have positioned the clamp in such a way as to strongly engage the clamp. Also, the physical configuration includes a number of pins, clamps, and exterior surfaces, all of which would require especial attention for hygienic cleaning.
- 10 US Patent 2935286 (Parsons) details a clamping apparatus consisting of an upper and lower clamp held together under pressure from an external spring arrangement, wherein opening and closing of the clamp is effected by movement of a lever arm.

- 15 This configuration requires extra attention to the external spring arrangement for hygienic cleaning and requires a high level of physical dexterity and strength to attach the clamp in a useable position.

- One further object of the present invention is to overcome the disadvantages of the prior art and to provide a clamp which is easy to use, easy to clean and does not require a high degree
- 20 of manual dexterity or physical strength to use.

It is an object of the present invention to address the foregoing problems or at least to provide the public with a useful choice

Further aspects and advantages of the present invention will become apparent from the ensuing description which is given by way of example only.

DISCLOSURE OF INVENTION

5 According to one aspect of the present invention there is provided an apparatus for releasably attaching an upright pole to a horizontal member, said apparatus including clamping means; said clamping means including:

an upper jaw or jaws

a lower jaw or jaws

10 spring biased means to retain the upper and lower jaws in an open or closed manner.

Preferably the upper and lower jaws are shaped to engage with a horizontal member.

15 Preferably the upper and lower jaws may be singular, or may consist of two or more jaws.

Preferably the upper and lower jaws are held together under pressure from the spring means.

According to another aspect of the present invention there is provided an upright pole to
20 which the clamping means are attached, said upright pole including a base tube.

Preferably said base tube includes an internal or external spring biasing means.

Preferably said base tube includes a transverse holding means.

Accordingly to a further aspect of the present invention, the transverse holding means includes hook means spaced to hold or retain bags of intravenous fluid.

- 5 Preferably the telescoping shafts include a locking means used to hold the shafts at any required length.

According to further aspect of the present invention, there is provided a clamping means to releasably attach an upright pole to a horizontal face of another object, the clamping means
10 and upright pole being easy to attach and release from the other object.

According to yet further aspect of the present invention, there is provided a clamping means to releasably attach an upright pole to a horizontal face of another object, the clamping means and upright pole being easy to clean.

15

BRIEF DESCRIPTION OF DRAWINGS

Further aspects of the present invention will become apparent from the following description which is given by way of example only and with reference to the accompanying drawings
20 in which:

Figure 1 is a cross section of an apparatus of the first embodiment of the present invention; and

Figure 2 is a cross section of the clamping means of the first embodiment of the present invention.

Figure 3 is a front view of the present invention.

Figure 4 is a side view of the second embodiment of the present invention.

BEST MODES FOR CARRYING OUT THE INVENTION

5 Referring to Figures 1 and 2, a clamp 2 is there shown. The apparatus 2 includes a base tube 3 which contains within it a first extension 4 and a second extension 5. The second extension 5 includes transverse holding means 6. The holding means 6 includes an indentation 7. The indentation 7 is shaped to securely retain an item (not shown). Release nuts 8a and 8b retain the extensions 4 and 5 at the required height within the base tube 3.

10

The clamping means is shown by the numeral 9. The clamping means 9 includes an upper jaw 10 and lower jaw 11. The lower jaw 11 is attached to the lower clamp slide 12 enclosed the base tube 3. The upper jaw 10 is attached to the base tube 3.

15 The spring 13 is affixed by means of a retaining screw at one end to the bottom 14 of the base tube 3 and is affixed at the other end to the slide 12 by a second retaining screw. An aperture 15 allows the boundary of the slide 12 and the lower jaw 11 to rise and fall within the base tube 3 when the spring 13 is compressed or expanded.

20 The apparatus 2 can be attached to the horizontal face of another object. Such objects include but are not limited to: a hospital bed, hospital or ambulance stretcher, a child cot, a chair or wheel chair. The apparatus 2 is attached by engaging the lower jaw 11 with the underside of a horizontal bar 16 on a bed or stretcher (not shown). The base tube 3 is then pulled upwards until the upper jaw 10 can engage with a further horizontal base 17. The spring 13

is thus compressed within the base tube 3 and provides the force by which the clamping means 9 is attached to the bed.

The transverse holding means 6 is then raised to the required height, and the first and second
5 extensions are retained at the appropriate height within the base tube 3 by means of the release nuts 8a and 8b.

The upper jaw 10 and lower jaw 11 may be specifically shaped to engage with the horizontal object, or may be an arcuate curve which will engage equally well with a variety of shapes,
10 including square, rounded, rectangular or triangular bars. Alternatively, the upper jaw 10 and/or lower jaw 11 may be angled so as to engage with the horizontal object.

The clamping means may be made of any material or mixture of materials selected from the following: stainless steel, steel, plastic, metal.

15

Referring to Fig 4, a second preferred embodiment of the present invention is there shown. The apparatus 22 includes a base tube 23 which contains within it a first extension 24 and a second extension 25. The second extension 25 includes transverse holding means 26. The holding means 26 includes an indentation 27. The indentation 27 is shaped to securably retain
20 an item (not shown). Release nuts 28 retain the extensions 24 and 25 at the required height within the base tube 23.

The clamping means is shown by the numeral 29. The clamping means 29 includes an upper jaw 210 and lower jaw 211. The lower jaw 211 is attached to the lower clamp slide 212 on

the exterior of the base tube 23. The upper jaw 210 is attached to a plate 30 attached to the base tube 3.

5 The spring 213 is affixed at one end to the plate 30 and at the other end to the slide 212. The tension of the spring 213 pulls the jaws together and into engagement with the horizontal object (not shown).

In a third embodiment of the present invention, the lower jaw 11 may also be rigidly attached to a slidable exterior sleeve (not shown), for ease of movement.

10

Aspects of the present invention have been described by way of example only and it should be appreciated that modifications and additions may be made thereto without departing from the scope thereof.

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COMPLETE SPECIFICATION

Clamping Device

We, Backas New Zealand Ltd, of 18 Moa Street, Burnham Camp, Burnham, Canterbury,
35 New Zealand, a New Zealand company, hereby declare the invention for which we pray
that a patent may be granted to us, and the method by which it is to be performed to be
particularly described in and by the following statement:

1

TECHNICAL FIELD

The present invention relates to a clamping device for releasably attaching an upright pole to a range of different objects and more particularly to a device for removably clamping a telescoping intravenous fluid carrier apparatus to an ambulance cot or other equipment.

5

BACKGROUND ART

A variety of devices to releasably attach an upright pole to a horizontal face of an object are known. Such devices are frequently permanently bolted into place or attached in such a way as to require a person to tighten a nut and/or bolt to release or engage the apparatus.

10 Additionally, the prior art equipment generally requires a high level of physical strength and manual dexterity to correctly and firmly attach the clamp.

US Patent 2696963 (Shepherd) relates to a removably attachable apparatus with clamping means consisting of an arcuate element adapted to engage one side of a bed post and a
15 clamping block including a collar, with pins to secure the block to the arcuate element. The clamping means is actuated by a wheel which shortens the distance between the block and the arcuate element.

This configuration relies on the strength of the person who attached the clamp to have
20 positioned the clamp in such a way as to strongly engage the clamp. Also, the physical configuration includes a number of pins, clamps, and exterior surfaces, all of which would require especial attention for hygienic cleaning.

US Patent 2673771 (Krewson) relates to a removably attachable apparatus which clamping means consists of a clamping rod with an adjustable hand wheel which engages with a stretcher.

5 Again, this configuration relies on the strength of the person who attached the clamp to have positioned the clamp in such as way as to strongly engage the clamp. Also, the physical configuration includes a number of pins, clamps, and exterior surfaces, all of which would require especial attention for hygienic cleaning.

10 US Patent 2935286 (Parsons) details a clamping apparatus consisting of an upper and lower clamp held together under pressure from an external spring arrangement, wherein opening and closing of the clamp is effected by movement of a lever arm.

This configuration requires extra attention to the external spring arrangement for hygienic
15 cleaning and requires a high level of physical dexterity and strength to attach the clamp in a useable position.

One further object of the present invention is to overcome the disadvantages of the prior art and to provide a clamp which is easy to use, easy to clean and does not require a high degree
20 of manual dexterity or physical strength to use.

It is an object of the present invention to address the foregoing problems or at least to provide the public with a useful choice.

Further aspects and advantages of the present invention will become apparent from the ensuing description which is given by way of example only.

DISCLOSURE OF INVENTION

5 According to one aspect of the present invention there is provided an apparatus for releasably attaching an upright pole to a horizontal member, said apparatus including clamping means; said clamping means including:

at least one upper jaw;

at least one lower jaw; and

10 spring means to bias the upper and lower jaws together in an open or closed manner.

Preferably the clamping means is slidably engaged.

15

Preferably at least one jaw of the clamping means is slidably retained relative of the axis of the base tube.

Preferably the upper and lower jaws are shaped to engage with a horizontal member.

20

According to another aspect of the present invention there is provided an upright pole to which the clamping means are attached, said upright pole including a base tube.

Preferably said base tube includes an internal or external spring biasing means.

Preferably said base tube includes a transverse holding means.

Accordingly to a further aspect of the present invention, the transverse holding means
5 includes hook means spaced to hold or retain bags of intravenous fluid.

Preferably the telescoping shafts include a locking means used to hold the shafts at any
required length.

10 According to further aspect of the present invention, there is provided a clamping means to
releasably attach an upright pole to a horizontal face of another object, the clamping means
and upright pole being easy to attach and release from the other object.

According to yet further aspect of the present invention, there is provided a clamping means
15 to releasably attach an upright pole to a horizontal face of another object, the clamping means
and upright pole being easy to clean.

BRIEF DESCRIPTION OF DRAWINGS

20 Further aspects of the present invention will become apparent from the following description
which is given by way of example only and with reference to the accompanying drawings
in which:

Figure 1 is a cross section of an apparatus of the first embodiment of the present
invention; and

Figure 2 is a cross section of the clamping means of the first embodiment of the present invention.

Figure 3 is a front view of the present invention.

Figure 4 is a side view of a second embodiment of the present invention.

5 Figure 5 is a side view of a third embodiment of the present invention

Figure 6 is a side view of the third embodiment of the present invention in a retaining position.

BEST MODES FOR CARRYING OUT THE INVENTION

10 Referring to Figure 1, an apparatus 2 is there shown. The apparatus 2 includes a base tube 3 which contains within it a first extension 4 and a second extension 5. The second extension 5 includes transverse holding means 6. The holding means 6 includes an indentation 7. The indentation 7 is shaped to securely retain an item (not shown). Release nuts 8a and 8b retain the extensions 4 and 5 at the required height within the base tube 3.

15

Referring to Figures 1 and 2, the clamping means is shown by the numeral 9. The clamping means 9 includes an upper jaw 10 and lower jaw 11. The lower jaw 11 is attached to the lower clamp slide 12 enclosed the base tube 3. The upper jaw 10 is attached to the base tube 3.

20

The spring 13 is affixed by means of a retaining screw (not shown) at one end to the bottom 14 of the base tube 3 and is affixed at the other end to the slide 12 by a second retaining screw. An aperture 15 allows the lower jaw 11 to rise and fall within the base tube 3 when the spring 13 is compressed or expanded.

The apparatus 2 can be attached to the horizontal face of another object. Such objects include but are not limited to: a hospital bed, hospital or ambulance stretcher, a child cot, a chair or wheel chair. The apparatus 2 is attached by engaging the lower jaw 11 with the underside
5 of a horizontal bar 16 on a bed or stretcher (not shown). The base tube 3 is then pulled upwards until the upper jaw 10 can engage with a further horizontal base 17. The spring 13 is thus compressed within the base tube 3 and provides the force by which the clamping means 9 is attached to the bed.

10 The transverse holding means 6 is then raised to the required height, and the first and second extensions are retained at the appropriate height within the base tube 3 by means of the release nuts 8a and 8b.

The upper jaw 10 and lower jaw 11 may be specifically shaped to engage with the horizontal
15 object, or may be an arcuate curve which will engage equally well with a variety of shapes, including square, rounded, rectangular or triangular bars. Alternatively, the upper jaw 10 and/or lower jaw 11 may be angled so as to engage with the horizontal object.

The clamping means may be made of any material or mixture of materials selected from the
20 following: stainless steel, steel, plastic, metal.

Referring to Fig. 3, a side view of the first preferred embodiment is there shown. The upper jaw 10 includes a pair of jaws 10

Referring to Fig. 4, a second preferred embodiment of the present invention is thereshown. The apparatus 22 includes a base tube 23 which contains within it a first extension 24 and a second extension 25. The second extension 25 includes transverse holding means 26. The holding means 26 includes an indentation 27 (not shown). The indentation 27 is shaped to
5 securably retain an item (not shown). Release nuts 28 retain the extensions 24 and 25 at the required height within the base tube 23.

The clamping means is shown by the numeral 29. The clamping means 29 includes an upper jaw 210 and lower jaw 211. The lower jaw 211 is attached to the lower clamp slide 212 on
10 the exterior of the base tube 23. The upper jaw 210 is attached to a plate 30 attached to the base tube 3.

The spring 213 is affixed at one end to the plate 30 and at the other end to the slide 212. The tension of the spring 213 pulls the jaws together and into engagement with the horizontal
15 object (not shown).

Referring to Figs 5 and 6, a third preferred embodiment of the present invention is thereshown. The apparatus 32 includes a base tube 33 which contains within it a first extension 34 and a second extension 35. The second extension 35 includes transverse
20 holding means 36. The holding means 36 may include an indentation (not shown) which is shaped to securably retain an item (not shown). Release nuts 38 retain the extensions 34 and 35 at the required height within the base tube 33.

The clamping means is shown by the numeral 39. The clamping means 39 includes an upper

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